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REPORT ON DADE COUNTY
INDUSTRIAL WASTE SOURCES
INVENTORY AND EVALUATION

Environmental Protection Agency
Water Quality Office
Division of Field Investigations - Denver Center
Denver, Colorado

March 1971

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INTRODUCTION

During July, 1970, the Governor of Florida requested assistance of the Federal Water Quality Administration in evaluating water-quality problems in Dade County, Florida. On October 22, 1970, the first Dade County Enforcement Conference was held.

One of the requirements which resulted from the Dade County Enforcement Conference was that an inventory of industrial wastewater sources within Dade County, Florida be compiled. Recommendations No. 10 of the "Conclusions and Recommendations of the Federal-State Conferees, Dade County Enforcement Conference" reads, in part:

> "..An inventory of all municipal and industrial waste sources within Dade County, Florida, shall be initiated immediately by the Federal Water Quality Administration in cooperation with the State of Florida and local officials. A report shall be made to the Conferees by April 1, 1971."

This report presents the results of the industrial wastewater inventory. The inventory data were collected during the period November 28, 1970 through February 1, 1971.

The cooperation and assistance provided by the State and local water-pollution control authorities were instrumental to the success of this waste-source inventory and evaluation. Grateful acknowledgement is also due numerous industry officials and the various water-department officials who cooperated in providing information and water-use data.

SUMMARY AND CONCLUSIONS

Few industries discharge wastewater directly into streams or canals in Dade County. Of 89 industries having significant wastewater discharges, only 15 discharge into water courses. This includes two soft-drink processors and a paper mill which are in the process of correcting their pollution problems. Most of the others are located on Miami International Airport and discharge acids, caustic, and solvents associated with aircraft painting, stripping, and cleaning into canals which empty into the Miami River. These canals cross the recharge area for the Miami Springs-Hialeah well field, the main water supply for Miami. The pollutants discharged to these canals represents a potential hazard to the Miami water supply.

Of the remaining industries, a total of 38 discharge their industrial wastewater into domestic sewer systems. Some of the wastewater entering the domestic sewers contains heavy metals in concentrations which exceed the criteria established by Rule 7 of the Dade County Commissioners, "Regulation of the Use of Sanitary and Storm Sewers, and the Discharge of Waters and Wastes into Utilities' Sewerage Systems."

A total of 36 industries discharge wastewater, often containing toxic compounds, into "dry wells", and are therefore a source of pollution to the ground-water aquifer underlying Dade County. This type of wastewater disposal is used extensively in and around Hialeah, in the recharge area for the Miami Springs-Hialeah well field, the source of domestic water for much of Dade County.

RECOMMENDATIONS

Most of the industrial wastewaters which are discharged directly to a water course are from the Miami International and Opa Locka Airports, which are located on lands controlled by the Dade County Port Authority (DCPA). The DCPA has the authority required to eliminate the pollution from these industries. It is recommended that the wastewater effluent from Miami Aviation Corporation, located on Opa Locka Airport, be discharged into the sanitary sewer system, instead of the storm drain.

Miami International Airport has the greatest concentration of industrial activity in Dade County. Wastewater from these industries should receive treatment prior to being discharged into the sanitary sewer. To achieve greater pollution control and to reduce construction and operation costs, it is recommended that DCPA build one industrial-wastewater collection and treatment facility, rather than having each industry construct and operate individual treatment facilities. DCPA must prohibit surface and subsurface discharges of untreated or inadequately treated wastewaters.

Several industries throughout Dade County discharge toxic materials directly into sewers with no pretreatment. Rule 7, adopted June 20, 1966 by the Dade County Commissioners, establishes maximum effluent concentrations of toxic materials and provides a mechanism whereby operators of wastewater treatment plants may require operational data from industries discharging into municipal sewers. It is recommended that the treatment plant operators utilize Rule 7 to obtain needed

information, and to prevent the discharge of harmful levels of industrial waste without adequate pretreatment. Violations of Rule 7 must be reported to the Dade County Air and Water Pollution Control Board for prosecution.

The practice of discharging industrial wastes, especially toxic wastes, into ground water is dangerous, wasteful, and must be discontinued, to protect the aquifer. It is recommended that the remaining, unsewered portions of Dade County be sewered at the earliest possible time. After the sewers are constructed, pretreatment of industrial wastes which are not amenable to treatment by domestic waste-treatment processes will be required.

Sampling is recommended at industries which discharge to ground water. The recommended sampling also includes domestic water-supply wells, to provide information on the prevalence of ground-water pollution, and a limited ground-water survey in the area of toxic discharges, to provide data on the fate of toxics in the aquifer.

Regulations of the Florida Department of Air and Water Pollution Control provide a mechanism whereby permits must be obtained for all discharges to the ground-water mass. As a requisite for such a permit, data is required on nearby wells and the quality of the wastewater. These regulations can do much to prevent pollution of the valuable Biscayne Aquifer, and must be enforced.

INDUSTRIAL WASTE SOURCE EVALUATION

Survey Methods

A list of over 1,800 Dade County industries was developed from sources such as manufacturing indicies and city directories. On the basis of industry type, this list was reduced to 503 industries which could be expected to be significant sources of industrial waste.

This list was further reduced through telephone interviews, during which information was obtained on the type and size of the industry, wastewater types, receiving waters, etc. On the basis of these interviews, field inspections were conducted at 233 industries. The local pollution-control agencies provided valuable assistance in the compilation of this reduced list. The various water departments in Dade County were contacted to obtain water-use information and to insure that the major water users were included on the list.

Owners, plant managers, and other company officials were visited, to obtain information on the origin, type, and disposal of wastewaters; plant processes; water supply; and wastewater quality. Where applicable, FWQA Form 120, "Report of Industrial Waste Water Disposal", was completed. Also, where applicable, a tour of the plant was requested and generally permitted by the industry. An inspection report was prepared on each industry which discharged significant industrial wastewater, and on those industries which had been listed as pollution sources by local pollution-control authorities. A total of 95 inspection reports were prepared. These reports are contained in an appendix entitled "Report on Dade County Industrial Waste Sources Inventory and Evaluation-Technical Appendix".

No discharges were sampled during this survey. The engineers prepared a list of industries which should be sampled, and provided information on sampling sites and parameters of concern.

Findings

Industrial activity in Dade County consists largely of small shops engaged in light industry such as plastics fabricating and metal plating. A major portion of the Dade County industrial activity is on or near Miami International Airport, and supports this major center of air commerce, through aircraft service, repair, and rehabilitation.

Table 1 provides information on the major sources of industrial wastewater throughout Dade County. The information on this table was derived from plant investigations, local water and wastewater plants, and files of local water-pollution control agencies. Water use figures reflect mean usage within the past two to four months.

Abatement actions are pending against several industries because of the discharge of untreated or poorly treated industrial wastes. These actions have been taken under the 1899 Refuse Act and local pollution-control regulations. The companies are listed on Table 2, with the status of corrective measures. Most of the industries have acted to correct the problem. The exceptions are the various aircraft service companies located on Miami International Airport.

Available data[(2)] indicate that only 28 percent of Dade County is currently serviced by sewer systems. Almost all industries located

within range of an existing system discharge their liquid wastes, both sanitary and industrial, to the sewers. In the case of certain industries, such as photo processing, the waste is given a preliminary treatment prior to discharge. Other industries, notably plating companies, often discharge toxic materials with no pretreatment. This is in violation of Rule 7, adopted by the Dade County Board of County Commissioners on June 20, 1966.

Rule 7, attached as Appendix 1, provides limits on the concentration of toxic materials which may be contained in the plant effluent to receiving sewers, in the following amounts:

Cyanides	0.01 mg/l
Copper, total	0.05 mg/l
Chromium, hexavalent	0.05 mg/l
Chromium, total	1.0 mg/l
Cadmium	0.5 mg/l
Zinc, total	1.0 mg/l

The Rule also prohibits the discharge of highly-colored waste, and requires approval of the discharge of significant industrial waste. Further, the rule requires the submission of data on the composition of industrial wastewaters. This Rule, which is a valuable water-pollution control proceedure, is largely ignored by industrial dischargers and operators of domestic wastewater treatment plants.

Industries which discharge wastes into the municipal sewers are included on Table 1. Many of these are suspected of discharging

wastes which do not comply with Rule 7. Sampling of the effluents from these industries is necessary in order to evaluate their impact on the receiving wastewater treatment plants and their ultimate effect upon the receiving waters. Companies suspected of discharging wastes in violation of Rule 7 include: Aluminaire, Inc., American Plating, Anodyne, Atlas Metal Industries, August Bros. Bakery, Diamond Color Labs, Far-Mac Plating, Inc., Florida Carib Fishery, Inc., Miller Industries, Perkins Marine Lamp & Hardware Corp., Southern Plating, and Super Brand Dairy.

Operational data collected during a parallel municipal waste treatment inventory indicate that the industrial-waste discharges generally have not adversely affected the operation of the various wastewater treatment plants. This is a result of the large quantity of dilution available in most of the collection systems. The Myrtle Grove treatment plant inflow has a higher percentage of industrial wastewater than most of the other plants, and has previously experienced operational difficulties due to "slug" loads of industrial wastes. These "slugs" reportedly included milk-processing and metal-plating wastes.

Engineers conducting a parallel municipal waste inventory learned that a consultant, Precision Analysis, Inc., recently completed a study of industrial wastewaters discharged to the Myrtle Grove treatment plant. Attempts to secure a copy of this report were unsuccessful. Data in the report would be of value to the conferees in evaluating the effect of industrial wastewater on domestic treatment systems.

Virtually all of Dade County is immediately underlain by the Biscayne Aquifer, a thick, highly-permeable aquifer consisting of

limestone and sand. Because of the numerous solution cavities in the limestone, the aquifer freely transmits water to or from wells, with almost no filtering action. This aquifer supplies virtually all domestic and industrial water used in Dade County, and is an extremely valuable resource which must be protected.

Unfortunately, in the unsewered portion of Dade County, the standard method of industrial waste disposal is via "dry wells" or "soakage pits" which introduce the waste, generally untreated, directly into this valuable and vulnerable aquifer. This practice is especially dangerous in the case of industries, such as platers, which discharge long-lived toxic compounds, zinc, chromium, and cyanide, as the result of their industrial activity. Only the large volume of dilution present in the aquifer has reduced the concentration of toxic materials. Many water users may be ingesting low levels of toxic compounds as a result of the use of "dry wells" for disposal of such toxics. This practice was especially common in and near Hialeah (Figure 1), an area which recharges the Miami Springs-Hialeah well field, a major source of domestic water throughout Dade County. Example industries include: Acme Plating and Finishing, Airco Plating, Continental Bumper Plating, London Platers, and Standard Bumper Corp. All industries which discharge to the Biscayne Aquifer are included on Table 1, and are identified as discharging to ground water.

During the 1961 "Symposium on Ground-Water Contamination", Mr. R. H. Baker, Jr., of the Florida State Board of Health delivered a paper[4]

which included excerpts from Chapter XXI of the Florida State Sanitary Code. This Code required an application for approval for all waste discharged to the ground-water mass. The application required information on nearby wells, the nature and analysis of the waste, and such additional information as may be required by the State Board of Health. No waste deemed injurious to the public health could be discharged to the ground water. Virtually identical provisions are contained in Chapter 17-3 of the Rules of the Department of Air and Water Pollution Control.

During the Industrial Waste Inventory, it was apparent that the regulations cited in 1961 by Mr. Baker and currently in effect have been largely ignored with the result that widespread ground-water contamination has occurred without the control which the regulations attempt to achieve.

Few industries discharge wastes directly into the surface waters of Dade County. Table 1 includes information on 15 industries which do discharge to the various rivers and canals. As shown by a comparison between Table 1 and Table 2, many of the industries discharging to surface waters are currently under court action for their discharges. Visible effects on receiving waters resulted from the discharge of:

1. Process wastes from Pepsi-Cola Bottling.
2. Wastewater from the clarifier operated by Miami Board, Simkin Industries.
3. Aircraft washing, solvents, and oil from various aircraft service organizations on Miami International Airport.

Both Miami International and Opa Locka Airports are served by sewers maintained by the Dade County Port Authority. Wastes from the Miami International Airport sewer are, in turn, discharged into the Miami sewage system, while wastes from Opa Locka Airport are treated in an existing treatment plant maintained by the Dade County Port Authority.

Although both airports are served by sanitary sewers, a large number of airport industries discharge industrial waste, predominately from aircraft paint stripping and cleaning, into nearby canals. The pollutants include oil, solvents, acid, caustic, and heavy metals. These discharges are included in Table 1. Some of the more significant sources include:

Aerodex

Modern Air Transport

Airlift, Inc.

Northeast Airlines

Butler Aviation of Miami, Inc.

Miami Aviation Corp. (Opa Locka Airport)

Legal action under the Refuse Act has been initiated by the U.S. Attorney against the first three companies listed above. Participants in the inventory observed the discharge of oil and solvents from Butler Aviation of Miami, Inc. and Modern Air Transports.

Currently, industries at both airports save waste oil in drums, and depend on local waste-oil reclaimers for removal and disposition

of the spent oil. Reportedly, the oil reclaimers are marginal operations, and may go out of business. If this occurs, the industries will not have an acceptable method of disposal for the large quantities of waste oil generated. This could be expected to aggravate existing water-pollution problems associated with the airport industries. If the reclaimers cease operation, DCPA should investigate the possibilities of installing oil-reclamation facilities at the airport.

The discharges of oil, chemicals, and metals from Miami International Airport are cause for grave concern, not only because of the effect on the canals and the Miami River, but also because, as shown in Figure 1, surface water in these streams is a source of recharge for the Miami Springs-Hialeah well field, a major source of domestic water in Dade County. Such pollutants can easily destroy this valuable aquifer. Dade County Port Authority should exercise its authority as property owner to prevent the discharge of inadequately treated wastes by its tenants. Better control, as well as economy of operation, would result if DCPA installed a single industrial wastewater collection and treatment system.

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4. U.S. Public Health Service, 1961, Proceedings. Symposium on Ground-Water Contamination, Cincinnati.

Table 1.--Significant Industrial Wastewater Sources in Dade County, Florida

Industry	Major Product or Service	Water Use Type and Amount	Nature of Waste Discharged	Receiving Water	Present Treatment	Treatment Needs - Remarks
Acme Plating and Finishing 651 West 18th Street Hialeah	Electroplating	Rinse water 1,386,000 gal/mo(4)	Heavy metals	Ground water	Minor	Pretreatment and sewer connection. Sample effluent and wells for heavy metals.
Aerodex, Inc. Miami International Airport Miami	Aircraft servicing	Wash water, sanitary 5,550,000 gal/mo(2)	Grease, oil and heavy metals, cyanide.	Canal tributary to Miami River, Sanitary sewer	Oil seperator, pH control	Adequate pretreatment and sewer connection. Sample for oil, grease, and heavy metals.
Airco Plating 3636 NW 46th Street Miami	Electroplating	Rinse water 838,000 gal/mo(4)	Heavy metals	Ground water	Neutralization, detention	Pretreatment and sewer connection. Sample well for heavy metals.
Aircraft Plating, Inc. 4101 NW 29th Street Miami	Electroplating	Wash water 3,490,000 gal/mo(3)	Heavy metals	Sanitary sewer Virginia Key	Reduction of cyanide and chromium	Data from Dade County. Company was under litigation. Recent sewer connection.
Airlift, International Miami International Airport Miami	Air freight operator	Aircraft cleaning 258,000 gal/mo(2)	Oil, solvents	Canal tributary to Miami River	Oil seperator	Pretreatment and sewer connection. Sample effluent for oil.
Airtech Services, Inc. Miami International Airport Miami	Light-aircraft overhaul	Aircraft washing 150,000 gal/mo(2)	Oil	Sanitary sewer Virginia Key	Oil seperator	None
Alert Plating 1115 NW 10th Avenue Miami	Bumper refinishing	Rinse water 1,542,000 gal/mo(3)	Heavy metals	Sanitary sewer Virginia Key	Drip tank prior to rinse	Sample effluent for heavy metals
Alton Box Board 6891 NW 74th Street Medley	Corrigated cardboard	Wash water, starch makeup	Ink, starch	recycled into starch, ground water	Settling, septic tank	Connection to sewer system.
Aluminaire, Inc. 1600 NW 165th Street North Miami Beach	Aluminum grills	Rinse water 184,000 gal/mo(6)	Aluminum	Sanitary sewer, Myrtle Grove		Sample effluent for aluminum
Aluminum Anodizing Company 3630 NW 76th Street Miami	Anodyzed aluminum	Rinse water 700,000 gal/mo(4)	Aluminum, acid, caustic, dye	Ground water	Settling	Adequate pretreatment and sewer connection. Sample effluent and wells for aluminum.

Table 1.--Significant Industrial Wastewater Sources in Dade County, Florida--Continued

Industry	Major Product or Service	Water Use Type and Amount	Nature of Waste Discharged	Receiving Water	Present Treatment	Treatment Needs - Remarks
Aluminum Finishing Corp. of Florida 13464 NW 26th Avenue Opa Locka	Anodyzed aluminum	Rinse water 1,919,000 gal/mo(7)	Aluminum, acid, caustic, dye	Ground water	Settling	Adequate pretreatment and sewer connection. Sample effluent and wells for aluminum.
American Plating 50 NW 22nd Avenue Miami	Decorative plating	Rinse water 9,000 gal/mo(3)	Heavy metals	Sanitary sewer Virginia Key		Drip tank prior to rinse. Sample effluent for heavy metals.
Anodyne 1270 NW 165th Street Miami	Lithograph and silk-screen print.	Wash water dye makeup 930,000 gal/mo(6)	Dye, heavy metals	Sanitary sewer, Myrtle Creek	pH control, aeration	Sample effluent for heavy metals.
Arrow Beef Corporation 18330 NE 2nd Avenue Miami	Cut meat from carcasses	Wash water	Dried blood	Sanitary sewer Myrtle Grove	Grease trap	Pretreatment
Associated Plastics 10101 E. 31st Street Hialeah	Paints	Product makeup, washing 62,000 gal/mo(1)	Paint, solvent	Ground water		Connection to sewer system.
Atlas Metal Industries, Inc. 1135 NW 159th Drive North Miami	Fabricated metal	Rinse water	Heavy metals	Sanitary sewer Myrtle Grove		Sample water supply and effluent for heavy metals.
August Bros. Bakery Seaboard Industrial Park Miami	Bread products	Wash water	High organic load	Sanitary sewer Seaboard Ind. Park		Sample effluent for BOD
Beverage Canners Seaboard Industrial Park Miami	Canned soft drinks	Product makeup, wash water 3,320,000 gal/mo(3)	Organic loading	Sanitary sewer, Seaboard Ind. Park		Sample effluent for BOD
Birmy Photo Engraving Co. 2244 NW 21st Terrace Miami	Photo developing printing, and engraving	Rinse water	Photo chemicals ferric chloride	Sanitary sewer Virginia Key		None

Table 1.--Significant Industrial Wastewater Sources in Dade County, Flordia--Continued

Industry	Major Product or Service	Water Use Type and Amount	Nature of Waste Discharged	Receiving Water	Present Treatment	Treatment Needs - Remarks
Borden's Dairy 7103 NE 2nd Avenue Miami	Milk and dairy products	Waste water	Organic loading	Ground water		Connection to sewer system.
Britt Metal Processing, Inc. 7490 NW 24th Avenue Miami	Aircraft engine parts	Chrome plating solution, washing 46,000 gal/mo(3)	Chromium	Ground water	Chromium reduction precipitation	Connection to sewer system.
Butler Aviation of Miami, Inc. Miami International Airport Miami	Refurbishing of used aircraft	Aircraft stripping and cleaning 182,000 gal/mo(2)	Oil, caustic, acid, solvents heavy metals	Canal tributary to Miami River	Settling tank	Pretreatment and connection to sewer system
Canada Dry Bottling Co. of Florida, Inc. 5900 NW 72nd Avenue Miami	Soft drinks	Water treatment, product makeup wash water	Organic loading	58th St. Canal	Being installed	Company presently under litigation
Capital Film Labs, Inc. 1996 NE 150th Street North Miami	Movie film processing	Rinse water 920,000 gal/mo(5)	Photo chemicals	Sanitary sewer, North Miami	Silver precipitation, solution recycling	None
Coca Cola Bottling Company of Miami 301 NW 29th Street Miami	Soft drinks	Product makeup, washing 4,511,000 gal/mo(3)	Organic loading	Sanitary sewers, Virginia Key		None
Colebrook Knitting Mills 3965 E. 10th Ct. Hialeah	Knit sweaters	Sweater washing	Natural oils	Closed system	recycling	None
Colorgraphic Photo Engravers 1822 NW 22nd Street Miami	Photo engraving	Rinse water 3,300 gal/mo(1)	Photo chemicals	Sanitary sewers Virginia Key		None
Continental Bumper Plating 4975 E. 10th Lane Hialeah	Bumper refinishing	Rinse water 6,100 gal/mo(4)	Cyanide, heavy metals	Ground water	Settling	Pretreatment and connection to sewer system. Sample effluent

Table 1.--Significant Industrial Wastewater Sources in Dade County, Florida--Continued

Industry	Major Product or Service	Water Use Type and Amount	Nature of Waste Discharged	Receiving Water	Present Treatment	Treatment Needs - Remarks
Continental Can Company Seaboard Industrial Park Miami	Cans	Cooling 314,000 gal/mo(3)	Heat, heavy metals	Sanitary sewer, Seaboard Ind. Park		Sample effluent.
Cott Bottling of Florida 7130 NW 35th Avenue Miami	Soft drinks	Product makeup, washing	Organic loading	Ground water		Connection to sanitary sewer system.
Dade County Dairies 7350 NW 30th Avenue Miami	Milk products	Wash water, cooling	Bacteria, organics	Ground water	Spray irrigation	Connection to sewer system.
Dade Division, American Hospital Supply Corporation 1851 Delaware Parkway Miami	Diagnostic Reagents	Wash water 181,000 gal/mo(1)	Chemicals, bacteria	Sanitary sewer Virginia Key	pH control	Sample effluent
Delta Air Lines Miami International Airport Miami	Airline	Aircraft washing	Oil, solvents	Canal	Oil seperator	Now minor use of facility. Company under litigation.
Diamond Color Labs 1999 NE 150th Street North Miami	Film processing	Rinse water	Photo chemicals	Sanitary sewer North Miami		Inspector refused admission to plant. Sample effluent. Company reportedly treats effluent.
Dodge, Inc. 380 NE 60th Street Miami	Electroplating	Rinse water 29,000 gal/mo(3)	Heavy metals	Ground water	Settling	Pretreatment and connection to sewer system.
Eastern Air Lines Miami International Airport Miami	Airline	Aircraft washing, metal plating 14,520,000 gal/mo(2)	Oil, heavy	Sanitary sewer, Virginia Key Canal	Oil seperator, metal precipitation	Connection of all wastes lines to sewer system
Economy Packing Company 2419 West 3rd Court Hialeah	Killing and cutting beef	Washing 498,000 gal/mo(4)	Grease, organic loading	Ground water	Grease traps septic tanks	Connection to sewer system
Engravers, Inc. 1120 NW 21st Street Miami	Photo engraving	Rinse water	Photo chemicals, heavy metals	Sanitary sewer, Virginia Key	Neutralization, silver precipitation	Classified work, no plant admittance.

Table 1.--Significant Industrial Wastewater Sources in Dade County, Florida--Continued

Industry	Major Product or Service	Water Use Type and Amount	Nature of Waste Discharged	Receiving Water	Present Treatment	Treatment Needs - Remarks
Estes Silversmiths 2152 NW 17th Avenue Miami	Decorative plating	Rinse water	Heavy metals	Sanitary sewer, Virginia Key		Small operation.
Far Mac Plating, Inc. 2196 NW 17th Avenue Miami	Metal plating	Rinse water 12,000 gal/mo(1)	Heavy metals	Sanitary sewer, Virginia Key		Sample effluent for heavy metals
Farm Stores, Inc. 5800 NW 74th Avenue Miami	Milk and Ice cream	Process, cooling, boiler from well	Waste milk and products	Ground water	Activated treatment	Better operation at existing waste treatment facilities.
Federal Packing Company 330 W. 23rd Street Hialeah	Killing and cutting beef	Washing 599,000 gal/mo(4)	Blood, paunch manure, grease	Ground water	Ineffective old package plant	Pretreatment. Connect to sewer system when completed in Hialeah area.
Florida Carib Fishery, Inc. 25 SW South River Drive Miami	Lobster Processer		Organic loading from lobster process	Sanitary sewer Virginia Key	None	Pretreatment
Florida Live-Pack Lobster Sales 34 Hook Square Miami Springs	Lobster sales	Cooling water	Coliforms	Canals	Settling	Connection to sewer system. Fecal coliforms apparently result from other tenants (theatre) on property. Company under litigation.
Florida Processing Company 6900 NW 69th Street Miami Springs	Tallow and meat scrap processing	Rinse water boiler feed	Organic loading grease	Trucked to Virginia Key	Package plant chlorination	In operation.
G. Gertz Enterprises 3401 N. 73rd Street Miami	Knitting mill	Washing and dyeing 682,000 gal/mo(4)	Oil and dye	Ground water	Carbon filters	Connection to sewer system.
Gotham Provision Company, Inc. 7301 NW 74th Street Medley	Killing and cutting beef	Washing	Blood, paunch manure, grease	Ground water	Settling, grease trap	Connection to sewer system
Henderson's Portion Pak 4202 Salzedo Coral Gables	Processing food products	Wash water shrimp thawing	Grease, organic loading	Sanitary sewer Coral Gables	Grease trap	None

Table 1.--Significant Industrial Wastewater Sources in Dade County, Florida--Continued

Industry	Major Product or Service	Water Use Type and Amount	Nature of Waste Discharged	Receiving Water	Present Treatment	Treatment Needs - Remarks
Home Milk Producers Association 2451 NW 7th Avenue Miami	Process milk	Wash, cooling 7,266,000 gal/mo(3)	Organic loading	Sanitary Sewer Virginia Key	Recirculated cooling water	None
Homestead Air Force Base Homestead	Air Force Base	Washing aircraft	Solvents, detergent, oil and grease	Canals	Oil seperator	None
Howard Johnson 1631 West Flagler Street Miami	Ice cream	Boiler feed, cooling, process wash water 240,000 gal/mo(3)	Organic loading	Sanitary sewer Virginia Key		None
International Aerodyne, Inc. Miami International Airport Miami	Aircraft maintenance	Aircraft washing and stripping 8,300 gal/mo(2)	Oil, caustic, acid, solvent, heavy metals	Sanitary sewer Virginia Key	None	Pretreatment: Sample drain during aircraft washing. Question as to disposal of waste.
Jim Robbins Seat Belt Company 705 E. 10th Avenue Hialeah	Finish seat belts from spool fabric	Cooling, washing 3,300,000 gal/mo(4)	Dye	Sanitary sewer for cooling water. Sealed pit for dye wash	None	None
Key Biscayne Hand Print 3480 NW 41st Street Miami	Silk screen printing	Water feed, washing and dyeing	Dye	Hauled away	None	Connect to sewer.
Kim Color (Tremendous Color, Monkey Color, Inc.) 532 West 20th Street, Hialeah	Photo processing	Rinse water 2,196,000 gal/mo(4)	Photo chemicals	Ground water	Settling	Pretreatment and connection to sewer system (Plans have been made for connection)
London Platers 1080 E. 24th Street Hialeah	Decorative plating	Rinse water fron well	Heavy metals	Ground water		Pretreatment and connection to sewer system. Sample effluent and wells for heavy metals
McArthur Jersey Farms 6851 NE 2nd Avenue Miami	Milk distribution	Cooling, washing 6,592,000 gal/mo(3)	Organic loading	Ground water		Connection to sewer system

Table 1.--Significant Industrial Wastewater Sources in Dade County, Florida--Continued

Industry	Major Product or Service	Water Use Type and Amount	Nature of Waste Discharged	Receiving Water	Present Treatment	Treatment Needs - Remarks
Miami Aviation Corporation Opa Locka Airport Opa Locka	Aircraft refurbishing	Aircraft stripping and cleaning 280,000 gal/mo(2)	Oil, solvents acid, caustic, heavy metals	Canal via storm drain	None	Pretreatment and connection to existing sanitary sewer system. Sample drainage, trace flow with dye.
Miami Board, Division of Simkins Ind., Inc. P. O. Box 1397 Miami	Cardboard	Cooling, wash, process	Organic loading, settleable solids	Tamaimi Canal	Clarification, chlorination	Connection to sewer system. Company under litigation
Miami Dye Works 355 NE 72nd Terrace Miami	Dyed fabrics	Wash water 650,000 gal/mo(3)	Dye, organics	Ground water (salt water)	Settling	Pretreatment and connection to sewer system
Milgo Electronic Corporation 7620 NW 36th Avenue Miami	Electronic equipment manufacture	Rinse water from chrome plating 374,000 gal/mo(4)	Chromium	Ground water	Chromium reduction, settling	Connection to sewer system. Sample effluent for chromium
Miller Industries 16295 NW 13th Avenue Miami	Aluminum pieces	Rinse water 325,000 gal/mo(6)	Haxavalent chromium	Sanitary sewer Myrtle Grove	None	Pretreatment for chromium reduction
Modern Air Transport Miami International Airport Miami	Air freight	Aircraft washing 692,000 gal/mo(2)	Oil, solvents, heavy metals	Canal tributary to Miami River	Primitive oil seperator	Pretreatment and connection to sewer system.
Modern Aluminum Coatings, Inc. 7295 NW 64th Street Miami	Anodyzed aluminum	Rinse water from wells	Aluminum, acid, caustic	Ground water	Settling	Pretreatment and connection to sewer system. Sample inflow and outflow from pond for aluminum.
National Brewing Company 637 NW 13th Street Miami	Fermented drinks	Wash water, product makeup, 16,529,000 gal/mo(3)	Organic loading	Sanitary sewer Virginia Key		None
National Linen Service 1950 NW 1st Avenue Miami	Commercial linen cleaning	Wash water 5,600,000 gal/mo(1)	Soap, oil	Sanitary sewer Virginia Key	Soap degradation	None

Table 1.--Significant Industrial Wastewater Sources in Dade County, Florida--Continued

Industry	Major Product or Service	Water Use Type and Amount	Nature of Waste Discharged	Receiving Water	Present Treatment	Treatment Needs - Remarks
Natro, Inc. (Veric Processing) 2755 W. 8th Avenue Hialeah	Textiles	Unknown	Dye, paint	Ground water	Have plant	Refused to see inspectors. Effluent from plant visibly discolored. Sample.
Neray Laundry 160 Ali Baba Avenue Opa Locka	Commercial laundry	Wash water 1,942,000 gal/mo(7)	Soap, caustic	Sanitary sewer, Opa Locka	Settling	None
Northeast Air Lines Miami International Airport Miami	Passenger and freight airline	Aircraft washing 35,000 gal/mo(2)	Oil, solvents, heavy metals	Canal tributary to Miami River	3 primitive oil seperators	Pretreatment and connection to sewer system.
Pepsi Cola Bottling Company of Miami, Inc. 7777 NW 41st Street Miami	Soft drink manufacture	Process boiler feed domestic use from wells	Unknown constitutants being sampled by Dade County Pollutant Control	Graham Dairy Canal	Have plant	Reddish-brown effluent flow from existing plant. Need to improve and properly operate plant.
Perkins Marine Lamp and Hardware Corporation 16490 NW 13th Avenue Miami	Manufacture marine hardware	Process, boiler feed, domestic use 1,379,000 gal/mo(6)	Heavy metals	Sewer	None	Pretreatment
Propeller Service of Miami and Aero Facilities, Division of Prop. Service Miami International Airport Miami	Aircraft maintenance	Washing 250,000 gal/mo(2)	Oil and grease, solvent cleaner	Sewer, Canal tributary to Miami River	2 oil seperators retention tank hauling service	Verify by sampling that system sewer are adequate pretreatment Connection to sewer system.
Robert Russell Metals 5761 NW 37th Avenue Miami	Produces aluminum extrusion billets	Cooling wells	Metals	Ground water	Settling	Pretreatment and connection to sewer.
Seaboard Coastline Railroad Miami	Freight transport	Washing of rail equipment	Oil, solvents	Canal	Flotation, floculation	Connection to sewer system
Selig Chemical 660 W. 18th Street Hialeah	Warehousing chemical	Washing	Unknown	Ground water	Settling	Pretreatment and connection to sewer.

Table 1.--Significant Industrial Wastewater Sources in Dade County, Florida--Continued

Industry	Major Product or Service	Water Use Type and Amount	Nature of Waste Discharged	Receiving Water	Present Treatment	Treatment Needs - Remarks
Smith and Butterfield 3170 NW 36th Street Miami	Film developer	Rinse water 190,000 gal/mo(1)	Photo chemicals	Ground water	Silver precipitation	Connection to sewer
Smith, Richardson, and Conroy 3500 NW 62nd Street Miami	Portion pack meat	Boiler feed wash water 250,000 gal/mo(1)	Oil and grease Organic loading	Ground water	Settling, oil and grease skimming	Connection to sewer
Southern Air Transport, Inc. Miami International Airport Miami	Air transport freight	Washing aircraft and equipment 50,000 gal/mo(2)	Oil, grease and solvents	Sanitary sewer Virginia Key	Oil skimmer	None
Southern Plating, Inc. 720 NW 72nd Street Miami	Plated aircraft parts	Rinse water 156,000 gal/mo(3)	Cyanide and heavy metals	Sanitary sewer Virginia Key	None	Pretreatment
Southern Beverages 3601 NW 55th Street Miami	Soft drink manufacture	Process product makeup, rinsing	Organics and detergent	Ground water	None	Connection to sewer
Standard Bumper Corporation 2500 W. 3rd Ct., Hialeah	Bumper refurbishing	Rinse water 22,000 gal/mo(4)	Heavy metals, cyanide	Ground water	None	Pretreatment and connection to sewer. Sample effluent for Heavy metals.
Super Brand Dairy Seaboard Industrial Park Miami	Milk distribution	Wash water 1,070,000 gal/mo(3)	Organic loading at 860 ppm BOD	Sanitary sewer Seaboard Ind. Park	None	Pretreatment
Sun-Aid Food Products 3615 NW 60th Street Miami	Manufacture jelly, jams, mustard mayonnaise	Product makeup cooling wash 240,000 gal/mo(1)	Organic loading	Ground water	Grease trap	Connection to sewer system
Tallo-Master Scott Road Hadley	Grease processing	Wash, cooling	Grease	Canal	Oxidation pond, skimming	Connection to sewer system. Company cited by county for grease discharges.
Tower Paint Company 620 West 27th Street Hialeah	Manufacture paint	Product makeup wash 77,000 gal/mo(4)	Paint, solvents, detergents	Ground water	Settling and sludge disposal	Pretreatment and connection to sewer

Table 1.--Significant Industrial Wastewater Sources in Dade County, Florida--Continued

Industry	Major Product or Service	Water Use Type and Amount	Nature of Waste Discharged	Receiving Water	Present Treatment	Treatment Needs - Remarks
Tripure Spring Water Company and Standard Chemical Co. 3355 NW 73rd Street Miami	Bottled water	Wash water, product makeup, boiler feed 506,000 gal/mo(1)	Minerals, detergents	Ground water	None	None
Tropical Plating 1825 NW 79th Street Miami	Decorative metal plating	River water-wells	Heavy metals cyanide	Ground water	Settling	Pretreatment and connection to sewer. Sample effluent for heavy metals.
Uni-Vinyl Corporation 3750 NW 43rd Street Miami	PVC compounding	Cooling	PVC and other organics	Ground water	None	Connection to sewer
Zippy Chocolate Beverage 355 NW 52nd Street Miami	Chocolate beverages	Product makeup boiler feed, wash	Organic loading, detergent BOD 800-1,000 mg/l	Ground water	None	Connection to sewer system

Source of Water-Use Data.
1/ Supplied by Company.
2/ Dade County Port Authority.
3/ Miami Water Department.
4/ Hialeah Water Department.
5/ North Miami Water Department.
6/ North Miami Beach Water Department
7/ Opa Locka Water Department.

Table 2.--Industries Currently Under Enforcement Action

Company	Pollution Problem	Type Action	Status
Aerodex, Inc.	Oil Discharge	1899 Act	Company reducing activities.
Airlift, International	Oil Discharge	1899 Act	Company reinstituted use of oil seperator.
Modern Air Transport	Oil Discharge	1899 Act	Discharges continuing.
Canada Dry Bottling Co.	Process waste to Canal	County Regulation	Continuing. Plant being installed.
Delta Air Lines	Oil Discharge	County Regulation	Activities reduced.
Farm Stores, Inc.	Milk wastes	County Regulation	Existing treatment plant not operating properly.
Florida Live-Pack Lobster Sales	Fecal coliform	County Regulation	Apparently results from cross connection by tenant. Investigation continuing.
Florida Processing	Grease	County Regulation	Now hauling waste to plant, prior to completion of new treatment system.
National Air Lines	Oil Discharge	County Regulation	New plant recently completed.
Pan American Air Lines	Oil Discharge	County Regulation	Recently improved treatment.
Pepsi-Cola Bottling Co.	Process waste	County Regulation	Discharge continuing.
Miami Board, Simkins Industries	Fecal coliform	County Regulation	Apparently results from cross connection. Investigation continuing.
Tallo-Master	Grease discharge	County Regulation	Skimmer not maintained.
Matro, Inc. (Veric Processing)	Paint and dye in effluent	County Regulation	Discharge continuing.

Information furnished by Dade County Pollution Control.

APPENDIX 1

RULE 7

REGULATION OF THE USE OF SANITARY AND STORM SEWERS AND THE DISCHARGE OF WATERS AND WASTES INTO UTILITIES' SEWERAGE SYSTEMS.

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APPROVED AND EFFECTIVE JUNE 20, 1966, BY RESOLUTION NO. R-606-66 OF THE BOARD OF COUNTY COMMISSIONERS OF DADE COUNTY, FLORIDA.

RULE 7

Regulating the use of sanitary and storm sewers and the discharge of waters and wastes into utilities sewerage systems, and providing penalties.

SECTION 1: Unless the context specifically indicates otherwise, the meaning of terms used in this rule shall be as follows:

(a) "Sewage Works" is a comprehensive term which includes facilities for collecting, pumping, treating and disposing of sewage.

(b) "Sewage" shall mean a combination of the water carried wastes from dwellings, business buildings, institutions, and industrial establishments. In effect it is the water supply of a community after it has been used and discharged into a sewer.

(c) "Sanitary Sewer" shall mean a sewer which carries sewage and to which storm, surface and ground waters are not intentionally admitted.

(d) "Storm Sewer" shall mean a sewer which carries storm and surface waters and drainage, but excludes sewage and polluted industrial wastes.

(e) "Industrial Wastes" shall mean the liquid wastes from industrial processes as distinct from sanitary sewage.

(f) "Garbage" shall mean solid wastes from the preparation, cooking and dispensing of food and from the handling, storage and sale of produce.

(g) "B.O.D." (denoting Biochemical Oxygen Demand) shall mean the quantity of oxygen utilized in the biochemical oxidation of

organic matter under standard laboratory procedure in 5 days at 20 degrees Centigrade, expressed in parts per million.

(h) "pH" shall mean the logarithm of the reciprocal of the weight of hydrogen ions in grams per liter of solution.

(i) "Suspended Solids" shall mean solids that either float on the surface of, or are in suspension in water, sewage or other liquids and which are largely removeable by laboratory filtering.

(j) "Person" shall mean any individual, firm, company, association, society, corporation or group.

(k) "P.P.M." shall mean parts per million by weight.

SECTION 2: Prohibited Wastes.

(a) No person shall discharge or cause to be discharged any storm water, surface water, ground water, roof runoff, subsurface drainage, cooling water or unpolluted industrial or commercial process water into any sanitary sewer.

(b) The discharge of cooling water from air conditioning units is prohibited. Cooling water free from bacteria and harmful chemicals should be discharged into storm water sewers. Except as hereinafter provided, no person shall discharge or cause to be discharged any of the following described wastes or waters to any public sewer:

1. Any liquid having a temperature higher than 150 degrees Fahrenheit.

2. Any water or waste containing more than 100 p.p.m. or exceed a daily average of 25 p.p.m. of any grease or oil or any oily substance.

3. Any gasoline, benzene, naptha, fuel oil or other flammable or explosive liquid, solid or gas.

4. Any waters or wastes containing a toxic or poisonous substance in sufficient quantity to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, or create any hazard in the receiving waters of the sewage treatment plant.

5. Any garbage that has not been properly shredded, which shall mean the wastes from the preparation, cooking and dispensing of food that have been shredded to such degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle size greater than 1/2 inch in any dimension.

6. Any waters or wastes having a pH lower than 5.5 or higher than 9.5 or having any other corrosive property capable of causing damage or hazard to structures, equipment or personnel of the sewage works.

7. Any water or waste containing toxic substances in quantities in excess of the following limits and measured at the point of discharge into the sewer system:

Cyanides - - - - - - - -	0.01 p.p.m.
Copper, total - - - -	0.5 p.p.m.
Chromium, hexavalent -	0.5 p.p.m.
Chromium, total - - -	1.0 p.p.m.
Cadmium - - - - - - -	0.5 p.p.m.
Zinc, total - - - - -	1.0 p.p.m.

Or any substance that will pass through the sewage treatment plant and exceed the state requirements for the receiving stream.

8. Any water or waste containing phenols in excess of 0.005 p.p.m.

9. Any water or waste containing suspended solids or color of such character and quantity that unusual attention or expense is required to handle such materials at the sewage treatment plant, without a special permit.

10. Any toxic radioactive isotopes, without a special permit.

No statement contained in this section shall be construed as prohibiting any special agreement or arrangement, between the utility and any person whereby an industrial waste of unusual strength or character may be admitted into the sanitary sewers for treatment by the utility either before or after pretreatment.

SECTION 3: Admission of Industrial Waste.

(a) Treatment of Industrial Wastes - The economy and desireability of the combined treatment of industrial wastes and sanitary sewage is recognized. However, not all types and quantities of industrial wastes can be so treated. Hence, it shall be the established policy to admit these types and quantities of industrial wastes that are not harmful or damaging to the structures, processes or operation of the sewage works or are not specifically prohibited by this rule.

It is also recognized that to provide this service additional facilities are required and the cost of which must be borne by those persons receiving its benefits.

(b) Approval Required for Industrial Wastes- In order to control the admission of industrial wastes, the discharge into the public sewers of any waters or wastes having:

1. A five day 20 degree Centigrade B.O.D. greater than 300 p.p.m. or

2. A suspended solids content greater than 350 p.p.m., or

3. A chlorine demand greater than 15 p.p.m., or

4. An average daily flow greater than 2% of the average daily sewage flow at the sewage treatment works, or

5. Any toxic substance, or

6. Any wastes which are considered by the Superintendent of the Sewage Treatment Works to offer possibilities or harm to structures, processes, or operation of the plant.

shall be subject to review and approval of the utility.

(c) Sewerage Systems Connected to an Ocean Outfall - When industrial wastes are discharged to a sewerage system utilizing an ocean outfall, items 1 through 3, Section 3(b) shall not be applicable unless it is being

treated by a sewage treatment plant where the loading of the biological treatment unit would be a factor.

(d) Survey Data Required - All users of the sewage system who are now discharging industrial wastes to the public sewers shall upon request of the sewage treatment plant Superintendent, fill in and file with the plant superintendent, within three months, a questionnaire which shall furnish pertinent data, inclusive of quantity of flow and an analysis of the water discharged to the sewage treatment plant.

Similarly any person desiring to make a new connection to the sewage system for the purpose of discharging industrial wastes to the public sewers, shall fill in and file with the sewage treatment plant superintendent an industrial waste questionnaire which shall furnish pertinent or predicted data inclusive of quantity of flow and an analysis of the industrial waste to be discharged into the sewer system.

(e) Sampling and Analysis - Samples shall be a composite sample collected daily over a three day period of operation so as to be a truly representative sample of the actual quality of the wastes. Sample, for analysis, must be collected by the engineer, chemist or his representative. Analysis shall be made by a registered Sanitary Engineer, or a graduate Chemist whose qualifications are acceptable to the Health Department, or Class A & B waste water treatment plant operator,

registered in Florida, using the laboratory methods for the examination of industrial waste as set forth in the latest edition of "Standard Methods for Examination of Water and Sewage" as published by the American Public Health Service.

(f) Extension of Time - When, due to the size or complexity of the waste disposal problem of an industry, it can be shown that it is impractical to meet the schedule imposed under Section 3(c) above, a request for an extension of time may be presented to the plant superintendent.

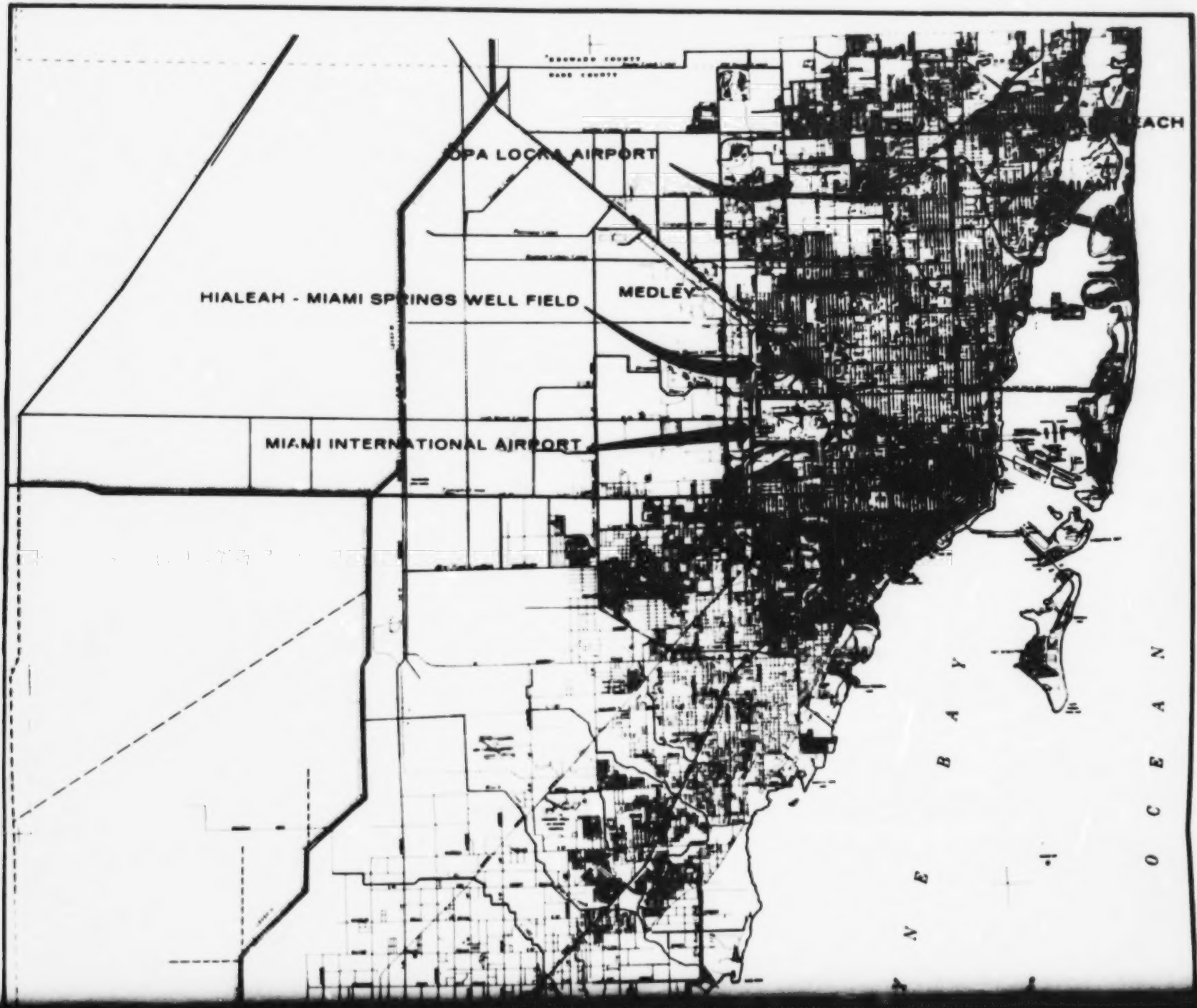
(g) Control Manhole - Any establishment discharging industrial wastes into the sewage system shall construct and maintain at his expense a suitable control manhole, or manholes downstream from any treatment, storage or other approved works, to facilitate observation, measurement and sampling of all wastes, including domestic sewage, from the establishment.

The control manhole or manholes shall be constructed at suitable and satisfactory locations and built in a manner approved by the Sewage Treatment Plant superintendent.

The control manhole shall be accessable to the Sewage Treatment Plant superintendent or his representatives at all times for sampling.

(h) Pretreatment - When required, the user of the utility sewer system shall provide at his expense such preliminary treatment or handling as may be necessary to modify the objectionable characteristics, or constituents to come within the limits set forth in Section 3(b) of this rule.

SECTION 4: The Sewage Treatment Plant Superintendent and other duly authorized employees of the utility bearing proper credentials and identification shall be permitted to enter upon all properties for the purposes of inspection, observation, measurement, sampling and testing in accordance with the provisions of this rule.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MEDLEY
MIAMI INTERNATIONAL AIRPORT
BISCAYNE BAY
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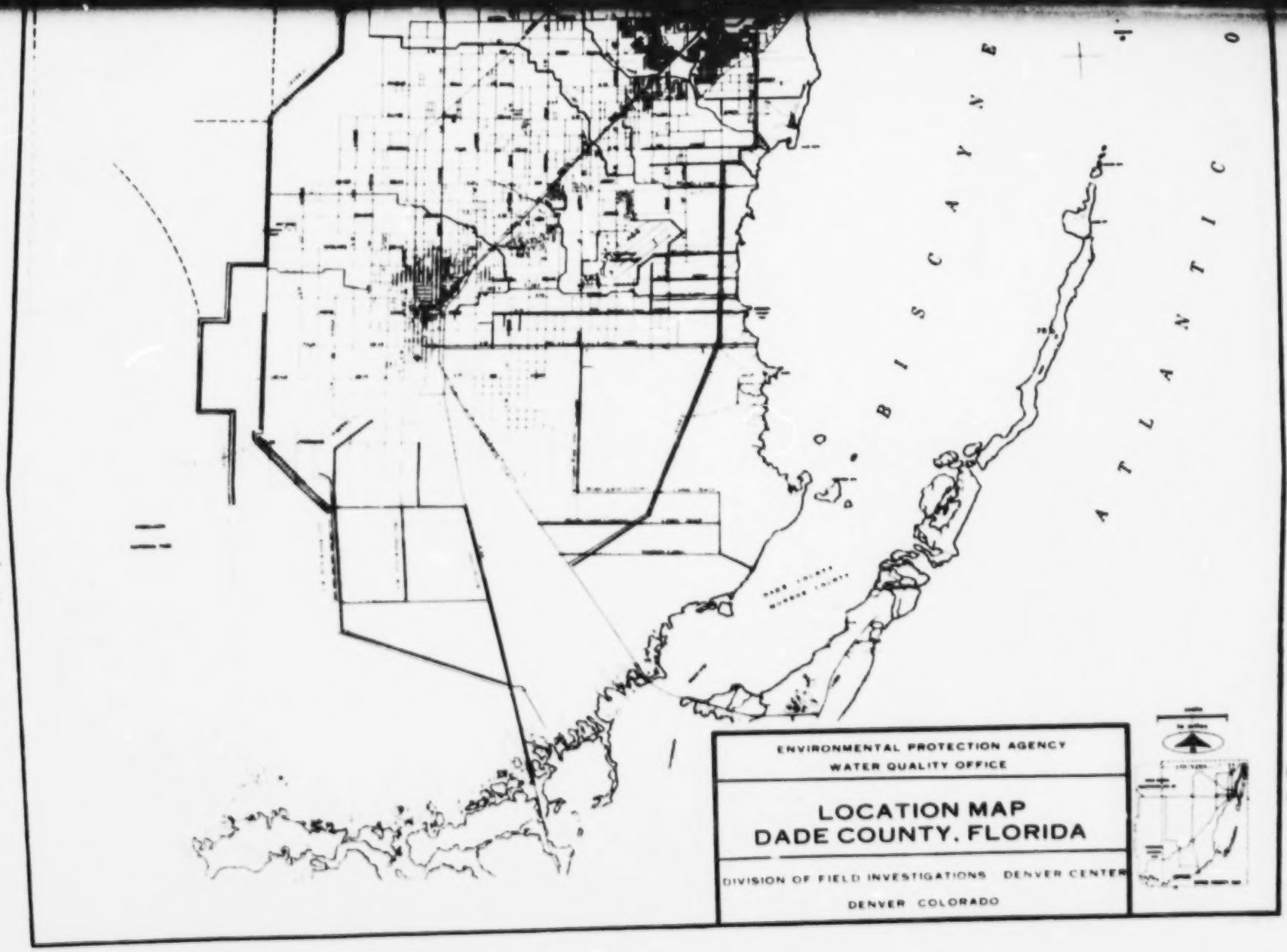
BISCAYNE
ATLANTIC
ENVIRONMENTAL PROTECTION AGENCY
WATER QUALITY OFFICE
LOCATION MAP
DADE COUNTY, FLORIDA
DIVISION OF FIELD INVESTIGATIONS DENVER CENTER
DENVER COLORADO